



Docket No.: H0002769
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Hoki Kwon

Application No.: 10/078,474

Filed: February 21, 2002

For: GAAS/AL(GA)AS DISTRIBUTED BRAGG
REFLECTOR ON INP

Customer No.: 000128

Confirmation No.: 48

Art Unit: 2828

Examiner: Dung T. Nguyen

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INFORMATION DISCLOSURE STATEMENT (IDS)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 CFR 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is filed more than three months after the U.S. filing date, OR more than three months after the date of entry of the national stage of a PCT application, AND after the mailing date of the first Office Action on the merits, whichever occurs first, but before the mailing date of a Final Office Action or Notice of Allowance (37 CFR 1.97(c)).

A copy of each non US patent references on the PTO/SB/08 is attached.

In accordance with 37 CFR 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR 1.56(a) exists. In accordance with 37 CFR 1.97(h), the filing

of this Information Disclosure statement shall not be construed to be an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

It is submitted that the Information Disclosure Statement is in compliance with 37 CFR 1.98 and the Examiner is respectfully requested to consider the listed references.

Our check in the amount of \$180.00 covering the fee set forth in 37 CFR 1.17(p) is enclosed. The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 01-1125, under Order No. H0002769. A duplicate copy of this paper is enclosed.

Dated: February 6, 2004

Respectfully submitted,

By

 #42,766
Song K. Jung

Registration No.: 35,210

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1900 K Street, N.W.

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(202) 496-7500

Attorney for Applicant

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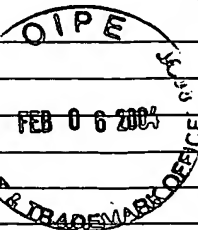
**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet	1	Of	8
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COMPLETE IF KNOWN

Application Number	10/078,474
Filing Date	2-21-02
First Named Inventor	Ho Ki Kwon
Art Unit	2828
Examiner Name	Dung T. Nguyen
Attorney Docket Number	H0002769

**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No ¹	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
		US 4445218		04-24-1984	Coldren	
		US 4608697		08-26-1986	Coldren	
		US 4622672		11-11-1986	Coldren et al.	
		US 4829347		05-09-1989	Cheng et al.	
		US 4873696		10-10-1989	Coldren et al.	
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		US 5082799	A	01-21-1992	Holmstrom et al.	
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		US 5365540	A	11-15-1994	Yamanaka	
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		US 5491710	A	02-13-1996	Lo	
		US 5513204	A	04-30-1996	Jayaraman	
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		US 5719891	A	02-17-1998	Jewell	
		US 5719894	A	02-17-1998	Jewell et al.	

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Considered

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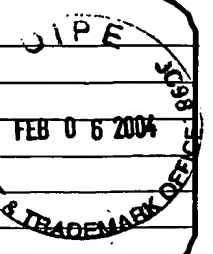
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		US 5719895	A	02-17-1998	Jewell et al.	
		US 5729567	A	03-17-1998	Nakagawa	
		US 5732103	A	03-24-1998	Ramdani et al.	
		US 5747366	A	05-05-1998	Brillouet et al.	
		US 5754578	A	05-19-1998	Jayaraman	
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Examiner Signature		Date Considered	
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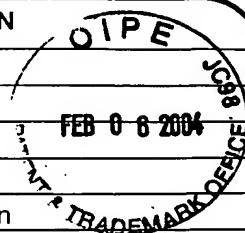
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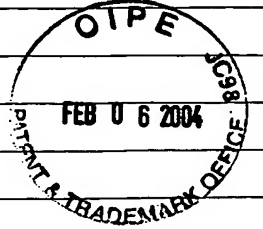


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		US 2003/0118068	A1	06-26-2003	Johnson	
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		US 2003/0123501	A1	07-03-2003	Johnson	
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		US 2003/0231680	A1	12-18-2003	Dariusz Burak	

Examiner Signature		Date Considered	
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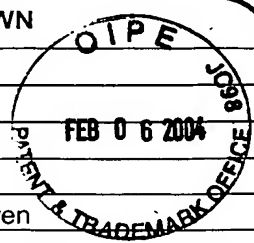
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Sheet 4 Of 8

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		Country Code ²	Number ⁴	Kind Code ⁵ (if known)				
		✓ EP	0 740 377	A1	10-30-1996	Hewlett-Packard Company		
		✓ EP	0 740 377	B	10-30-1996	Hewlett-Packard Company		
		✓ EP	0 765 014	A1	03-26-1997	France Telecom		
		✓ EP	0 765 014	B1	07-28-1999	France Telecom		
		✓ EP	0 822 630	A1	02-04-1998	Hewlett-Packard Company		
		✓ EP	0 874 428	A2	10-28-1998	Motorola, Inc.		
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		✓ EP	0 975 073	A1	01-26-2000	NEC Corporation		
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		✓ EP	1 294 063	A1	03-19-2003	Avalon Photonics AG		
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		✓ WO	98/007218	A1	02-19-1998	W.L. Gore & Associates, Inc.		
		✓ WO	00/033433	A2	06-08-2000	Arizona Board of Regents		
		✓ WO	00/033433	A3	06-08-2000	Arizona Board of Regents		
		✓ WO	00/038287	A1	06-29-2000	Honeywell, Inc.		
		✓ WO	00/052789	A2	02-29-2000	The Regents of the University of California		
		✓ WO	00/052789	A3	02-29-2000	The Regents of the University of California		
		✓ WO	00/065700	A2	11-02-2000	Gore Enterprise Holdings, Inc.		
		✓ WO	00/065700	A3	11-02-2000	Gore Enterprise Holdings, Inc.		
		✓ WO	01/016642	A2	03-08-2001	Agility Communications		
		✓ WO	01/016642	A3	03-08-2001	Agility Communications		
		✓ WO	01/017076	A2	03-08-2001	The Regents of the University of California		

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Sheet 5 Of 8

	✓	WO	01/017076	A3	03-08-2001	The Regents of the University of California		
	✓	WO	01/018919	A1	03-15-2001	The Regents of the University of California		
	✓	WO	01/024328	A2	04-05-2001	Agility Communications		
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	✓	WO	01/033677	A2	05-10-2001	Arizona Board of Regents		
	✓	WO	01/033677	A3	05-10-2001	Arizona Board of Regents		
	✓	WO	01/052373	A2	07-19-2001	Infineon Technologies Ag		
	✓	WO	01/052373	A3	07-19-2001	Infineon Technologies Ag		
	✓	WO	01/084682	A2	11-08-2001	Agility Communications, Inc.		
	✓	WO	01/093387	A2	12-06-2001	Sandia Corporation		
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	✓	WO	01/095444	A2	12-13-2001	Agility Communications, Inc.		
	✓	WO	01/098756	A2	12-27-2001	The Regents of the University of California		
	✓	WO	02/003515	A2	01-10-2002	Agility Communications, Inc.		
	✓	WO	02/017445	A1	02-28-2002	The Regents of the University of California		
	✓	WO	02/084829	A1	10-24-2002	Cielo Communications, Inc.		
	✓	WO	03/052797	A1	06-26-2003	Jiang et al.		

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published		T ²
		✓ International Search Report, dated 08-09-2003, relative to PCT application No. PCT/US 03/05368, the foreign equivalent to the instant U.S. application 10/078,474		
		✓ AKIYAMA, Y., et al., "Growth of High Quality GaAs Layers on Si Substrates by Mocvd". 1986, Journal of Crystal Growth, pp. 490-497.		
		✓ ALMUNEAU, G., et al., "Accurate control of Sb composition in AlGaAsSb alloys on InP substrates by molecular beam epitaxy", article, May 6, 1999, pgs 113-6, Vol. 208, Journal of Crystal Growth.		
		✓ ALMUNEAU, G., et al., "Improved electrical and thermal properties of InP-AlGaAsSb Bragg mirrors for long-wavelength vertical-cavity lasers", article, Oct 2000, pgs 1322-4, Vol. 12, No. 10, IEEE Photonics Technology Letters.		
		✓ ALMUNEAU, G., et al., "Molecular beam epitaxial growth of monolithic 1.55 μm vertical cavity surface emitting lasers with AlGaAsSb/AlAsSb Bragg mirrors", article, May/Jun 2000, pgs 1601-4, Vol. 8, No. 3, Journal of Vacuum Science Technology.		
		✓ ANAN, T., et al., "Continuous-wave operation of 1.30 μm GaAsSb/GaAs VCSELs", article, Apr 26, 2001, pgs 566-7, Vol. 37, No. 9, Electronics Letters.		

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Substitute for form 1449B-PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (USE AS MANY SHEETS AS NECESSARY) Sheet <u>6</u> Of <u>8</u>	COMPLETE IF KNOWN	
	Application Number	10/078,474
	Filing Date	2-21-02
	First Named Inventor	Ho Ki Kwon
	Group Art Unit	2828
	Examiner Name	Dung T. Nguyen
	Attorney Docket Number	H0002769

	<input checked="" type="checkbox"/>	BLACK, K., et al. "Double-fused 1.5 μ m vertical cavity lasers with record high T_0 of 132K at room temperature", article, Oct 1, 1998, pgs 1947-9, Vol. 34, No. 20, Electronics Letters.	
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	<input checked="" type="checkbox"/>	GOURLY, F., et al., "Epitaxial semiconductor optical interference devices", invited paper, 1987, pgs 178-189, Vol. 792, SPIE.	
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	<input checked="" type="checkbox"/>	HEGBLOM, E., et al., "Small efficient vertical cavity lasers with tapered oxide apertures", article, Apr 30, 1998, pgs 895-6, Vol. 34, No. 9, Electronics Letters.	
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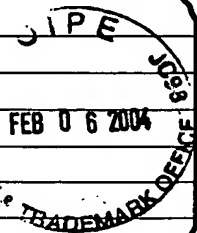
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<p>Substitute for form 1449B-PTO</p> <p style="text-align: center; font-size: 1.2em; font-weight: bold;">INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p style="text-align: center; font-size: 0.8em;">(USE AS MANY SHEETS AS NECESSARY)</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 20%;">Sheet</td> <td style="width: 20%; text-align: center;">72</td> <td style="width: 20%; text-align: center;">Of</td> <td style="width: 20%; text-align: center;">8</td> </tr> </table>		Sheet	72	Of	8	<p style="text-align: center; font-weight: bold;">COMPLETE IF KNOWN</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Application Number</td> <td style="width: 50%;">10/078,474</td> </tr> <tr> <td>Filing Date</td> <td>2-21-02</td> </tr> <tr> <td>First Named Inventor</td> <td>Ho Ki Kwon</td> </tr> <tr> <td>Group Art Unit</td> <td>2828</td> </tr> <tr> <td>Examiner Name</td> <td>Dung T. Nguyen</td> </tr> <tr> <td>Attorney Docket Number</td> <td>H0002769</td> </tr> </table>		Application Number	10/078,474	Filing Date	2-21-02	First Named Inventor	Ho Ki Kwon	Group Art Unit	2828	Examiner Name	Dung T. Nguyen	Attorney Docket Number	H0002769
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		<input checked="" type="checkbox"/> HONG, Y., et al., "Growth of GaInNAs quaternaries using a digital alloy technique", conference paper, Oct 01/3, 2001, pgs 1163-6, Journal of Vacuum Science and Technology B: Microelectronics and Nanometer Structures.	
		<input checked="" type="checkbox"/> HUFFAKER, D., et al., "1.15 μm wavelength oxide-confined quantum-dot vertical-cavity surface-emitting laser", article, Feb 1998, pgs 185-7, Vol. 10, No. 2, IEEE Photonics Technology Letters.	
		<input checked="" type="checkbox"/> HUFFAKER, D., et al., "1.3 μm room-temperature GaAs-based quantum-dot laser", Nov 2, 1998, pgs 2564-6, Vol. 73, No. 18, Applied Physics Letters.	
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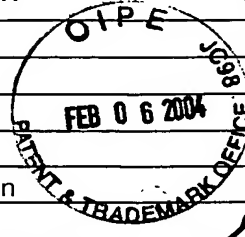
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<input checked="" type="checkbox"/>	PETERS, M., et al., "Realization and modeling of a pseudomorphic (GaAs _{1-x} Sb _x In _y Ga _{1-y} As)/GaAs bilayer-quantum well", article, Oct 30, 1995, pgs 2639-41, Applied Physics Letter 67 (18).	
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